

Claims

[c1] WHAT IS CLAIMED IS:

1. A vacuum cleaning tool for a vacuum cleaning device, the vacuum cleaning tool comprising:
a housing having a turbine chamber and a bottom plate, wherein the bottom plate has a working slot;
a rotatingly driven working tool rotatably supported in the housing so as to act through the working slot onto a surface to be worked on;
an air turbine arranged in the turbine chamber and having opposed axial end faces forming a gap together with side walls of the turbine chamber, respectively;
wherein the air turbine is drivingly connected to the working tool for driving the working tool;
wherein a turbine chamber wall of the turbine chamber has a first intake window and at least one second intake window, wherein the first intake window supplies a driving suction air stream to the air turbine and the at least one second intake window supplies a partial suction air stream to the turbine chamber;
wherein the driving suction air stream is supplied to a peripheral turbine surface on a first side of a plane that extends through a rotational axis of the air turbine and

wherein the partial suction air stream enters the turbine chamber on a second side of the plane extending through the rotational axis of the air turbine;
wherein a cross-sectional area of the at least one second intake window overlaps at least partially at least one of the gaps such that a portion of the partial suction air stream flows into the at least one gap.

- [c2] 2. The vacuum cleaning tool according to claim 1, wherein two of the second intake windows are provided, wherein each one of the gaps has one of the two second intake windows arranged thereat.
- [c3] 3. The vacuum cleaning tool according to claim 2, wherein the two second intake windows are connected to form a common intake slot.
- [c4] 4. The vacuum cleaning tool according to claim 3, wherein the common intake slot has a length, in an axial direction of the rotational axis of the air turbine, that is longer than a surface line of the peripheral turbine surface.
- [c5] 5. The vacuum cleaning tool according to claim 3, wherein the intake slot in an axial direction of the rotational axis of the air turbine has centrally a maximum height that is greater than a height at slot ends of the

common intake slot.

- [c6] 6. The vacuum cleaning tool according to claim 3, wherein the common intake slot has approximately a shape of a flattened circular section.
- [c7] 7. The vacuum cleaning tool according to claim 6, wherein the common intake slot has a shape of a semi-ellipse.
- [c8] 8. The vacuum cleaning tool according to claim 6, wherein an upper edge of the common intake slot facing away from the rotational axis of the air turbine and a turbine chamber roof have approximately a same curvature.
- [c9] 9. The vacuum cleaning tool according to claim 1, wherein the axial end face of the at least one gap that is overlapped by the cross-sectional area of the at least one second intake window is positioned in a plane extending through the at least one second intake window.
- [c10] 10. The vacuum cleaning tool according to claim 1, wherein the axial end faces and the peripheral turbine surface define a turbine edge, wherein a portion of the turbine edge is located in the at least one second intake window.

- [c11] 11. The vacuum cleaning tool according to claim 1, wherein the at least one second intake window extends into an area of the peripheral turbine surface.
- [c12] 12. The vacuum cleaning tool according to claim 1, wherein the ratio q/Q of a passage surface area q of the at least one second intake window relative to a passage surface area Q of the first intake window is smaller than 1.